

ABSTRACT

Aims and objectives:

The principal objective of this study was to estimate the plasma levels of neutrophil gelatinase associated lipocalin (NGAL) in a cohort of patients with acute coronary syndromes across their entire spectrum, and to correlate them with outcomes.

Background:

NGAL has been studied in the past as a sensitive indicator of acute kidney injury and contrast induced nephropathy. Very recently some studies have indicated the possibility of elevated NGAL levels in various cardiac conditions with or without acute kidney injury. One such study has looked at this molecule in patients with ST elevation myocardial infarctions where they found elevated levels in these patients, as well as, prognostic benefit of the molecule.

Methods:

87 patients with acute coronary syndromes were included in the study. Apart from the routine work up and management, all patients underwent determination of plasma NGAL and serum high sensitivity C reactive protein (HSCRP) levels at admission. The patients were followed up through the hospital stay as well as for one month after discharge for clinical outcomes, conventional echocardiographic parameters of left ventricular ejection fraction and global longitudinal strain by

speckle tracking imaging. Plasma NGAL was studied for its predictive power for various defined outcomes.

Results:

Plasma NGAL levels were detectably elevated in 67% of patients with acute coronary syndromes without any significant proportion with renal dysfunction, sepsis or overt infection. Plasma NGAL was the strongest independent predictor of all cause hospital mortality in Cox regression multivariate analysis with an odds ratio of 8.353, $p=0.0237$. Plasma NGAL did not correlate with HSCRP, severity of coronary artery disease or major adverse cardiac events at one month follow up.

Conclusion:

This is a small study that shows that plasma NGAL in patients admitted with acute coronary syndromes, can predict hospital mortality and forms the basis for consideration of this molecule as a possible new risk marker in acute coronary syndromes meriting further and more extensive investigation.

Keywords:

Neutrophil gelatinase associated lipocalin, acute coronary syndrome